Toxics Use Reduction Institute
Working to Make Massachusetts Safer for Everyone

MASSACHUSETTS ENVIRONMENTAL TRUST

REDUCING EXPOSURES TO PESTICIDES IN HUMANS AND WILDLIFE

a workshop assessing exposure, effects, protection and solutions to pesticide toxicity in Massachusetts

Scope. Manomet Center for Conservation Sciences and partners will host a one-day workshop on June 8th, 2005 in Boston to identify strategies for increasing protection of human, wildlife and environmental health from inadvertent exposure to pesticides. Invited workshop participants will present information on the sublethal effects of pesticide exposure, levels of exposure experienced by humans and wildlife in Massachusetts, and programs in place to protect human and wildlife health. The workshop will discuss protection afforded through the research, education, regulatory and advocacy activities of organizations and agencies, and develop recommendations for reducing toxic exposures.

Background. Current pesticide regulations in the environmental and human health fields are designed to protect human and wildlife communities from large-dose exposures to pesticides and prevent acute disease symptoms and mortality. Because the majority of current-use insecticides (e.g. cholinesterase-inhibiting organophosphates and carbamates) are much less persistent but more acutely toxic than the organochlorine pesticides (e.g. DDT) used historically, relatively little protection is currently afforded to humans and wildlife to prevent chronic, non-acute exposures. However, recent studies indicate that inadvertent exposure to pesticides in humans and wildlife is of concern because of new information on both the extent of low-level exposures and the significance of "sublethal" effects. Surveys of cholinesterase-inhibiting organophosphate metabolites in adults nation-wide indicate widespread and increasing exposure. Recent research shows children's exposure to pesticides is similarly pervasive. Wildlife studies indicate that sublethal, chronic effects impact a number of physiological functions and may affect overall viability and survival of some species.

Wildlife has alerted humans to chemical hazards in the environment for centuries. Important breakthroughs in public and environmental health were made in the last several decades as a result of physiological studies of birds and eggshell formation during the DDT era and, since then, of developmental abnormalities due to endocrine disruption from exposure to a wide variety of chemicals. An integrated examination of the parallels between human and wildlife health with respect to exposure to organochlorine chemicals yielded greater insights, greater awareness, and modified public policies. This proven strategy for advancing environmental protection through integrating wildlife and human toxicity studies has not been extended to one of the most important classes of chemicals actively applied to the environment—current-use pesticides.

A recent synthesis of human and wildlife pesticide effects studies conducted by Manomet will be presented at the workshop and will provide context for assessing local impacts through related presentations by stakeholders working to monitor, investigate, prevent and mitigate pesticide exposures in Massachusetts.

Products. The workshop will provide a round-table discussion of information on the exposure and effects of pesticides in general on humans and wildlife in Massachusetts. Diverse organizations and agencies are engaged proactively to protect Massachusetts human, wildlife and environmental health against toxic exposures. Participants will identify both currently effective strategies in environmental protection as well as areas in research, education, regulation and advocacy where advances could be made to strengthen protection of human and wildlife health. A proceedings from the workshop will serve as a resource guide for organizations and communities seeking to maximize protection from pesticide exposure, and will include synthesized technical information from the human and wildlife health scientific literature, assessments of current exposure in humans and wildlife to pesticides in Massachusetts, profiles of programs, organizations and agencies engaged in environmental protection, and recommendations for advancing protection in the state.

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Workshop Agenda

8:30 AM – Participants arrive, welcome, desired outcomes, introductions, agenda, logistics

9:30 AM – **Effects of pesticide exposure in humans and wildlife: Scoping the issue**

Sublethal effects of exposure to cholinesterase-inhibiting pesticides: a synthesis of the human and wildlife health literature --Stephanie Schmidt, Manomet Center for Conservation Sciences

Researching the environment and women's health – David Long, Silent Spring Institute

Flea control pesticides: Companion animals as sentinels for human health effects – Elizabeth Bertone-Johnson, Assistant Professor of Epidemiology, University of Massachusetts, Amherst

10:30 AM – Break

Non-Dietary Pesticide Exposure – Raymond Putnam, Massachusetts Pesticide Analysis Laboratory, University of Massachusetts, Amherst

Sublethal effects of pesticides on wildlife – Katharine Parsons, Manomet Center for Conservation Sciences

Assessment of pesticide exposure and effects in Massachusetts humans and wildlife – break-out groups, reporting back, synthesis

12:30 PM – Lunch (provided)

1:30 PM – **Protecting human and environmental health from pesticide effects: Current capacity and recommendations**

Research

- Stephanie Schmidt, Manomet Center for Conservation Sciences
- *Discussion*

Regulation/Policy

- Sarah Little, Massachusetts Pesticide Awareness Collaborative
- *Discussion*

Education/Outreach

- *SEANET: A Citizen Science Initiative for Coastal and Marine Ecosystem Health* – Becky Harris, Mark Pokras, Flo Tseng, Beth Suedmeyer, Tufts Wildlife Clinic and Tufts Center for Conservation Medicine, Tufts Cummings School of Veterinary Medicine
- *Working with Communities to Promote Pesticide Use Reduction: Activities of TURI and Massachusetts-Based Agencies and Groups* – Eileen Gunn, Community Program Manager, Toxics Use Reduction Institute
- *Discussion*

3:00 PM – Break

Recommendations for improving protection – break-out groups, reporting back, synthesis

4:30 PM – Workshop closing